```
          10        19        28        37        46        55
5' G GGC GCG CGC CGG GAG CGC GCT CGG AGG GTG GAA CTG GAT CGG GTT

          64        73        82        91        100       109
     TGC TGC CAG CGG CGT GAG CTT CGG CCG GCA TTT TAC AAC AGC TCC ACT CGC GCC

          118       127       136       145       154       163
     GGA CAC AGG GAG CAG CAG GCA CGA GCA CGC GTT TCC CGC AAC CCG ATA CCA TCG GAC AGG

          172       181       190       199       208       217
     ATT TCT CCG CCT CAG CCC AAC GGG GAG ATC TCT GGA AAC ATG GCT ACA GAA CAT
                                                      M   A   T   E   H

          226       235       244       253       262       271
     GTT AAT GGA AAT GGT ACT GAA GAG CCC ATG GAT ACT ACT TCT GCA GTT ATC CAT
      V   N   G   N   G   T   E   E   P   M   D   T   T   S   A   V   I   H

          280       289       298       307       316       325
     TCA GAA AAT TTT CAG ACA TTG CTT GAT GCT GGT TTA CCA CAG AAA GTT GCT GAA
      S   E   N   F   Q   T   L   L   D   A   G   L   P   Q   K   V   A   E

          334       343       352       361       370       379
     AAA CTA GAT GAA ATT TAC GTT GCA GGG CTA GTT GCA CAT AGT GAT TTA GAT GAA
      K   L   D   E   I   Y   V   A   G   L   V   A   H   S   D   L   D   E
```

FIGURE 1A

```
        388             397             406             415             424             433
AGA  GCT ATT GAA   GCT TTA AAA   GAA TTC AAT   GAA GAC GGT   GCA TTG GCA   GTT CTT
 R    A   I   E     A   L   K     E   F   N     E   D   G     A   L   A     V   L

        442             451             460             469             478             487
CAA  CAG TTT AAA   GAC AGT GAT   CTC TCT CAT   GTT CAG AAC   AAA AGT GCC   TTT TTA
 Q    Q   F   K     D   S   D     L   S   H     V   Q   N     K   S   A     F   L

        496             505             514             523             532             541
TGT  GGA GTC ATG   AAG ACT TAC   AGG CAG AGA   GAA AAA CAA   GGG ACC AAA   GTA GCA
 C    G   V   M     K   T   Y     R   Q   R     E   K   Q     G   T   K     V   A

        550             559             568             577             586             595
GAT  TCT AGT AAA   GGA CCA GAT   GAG GCA AAA   ATT AAG GCA   CTC TTG GAA   AGA ACA
 D    S   S   K     G   P   D     E   A   K     I   K   A     L   L   E     R   T

        604             613             622             631             640             649
GGC  TAC ACA CTT   GAT GTG ACC   ACT GGA CAG   AGG AAG TAT   GGA CCA CCA   CCT CCA
 G    Y   T   L     D   V   T     T   G   Q     R   K   Y     G   P   P     P   P

        658             667             676             685             694             703
GAT  TCC GTT TAT   TCA GGT CAG   CAG CCT TCT   GTT GGC ACT   GAG ATA TTT   GTG GGA
 D    S   V   Y     S   G   Q     Q   P   S     V   G   T     E   I   F     V   G
```

FIGURE 1B

```
        712         721         730         739         748         757
AAG ATC CCA AGA GAT CTA TTT GAG GAT GAA CTT GTT CCA TTA TTT GAG AAA GCT
 K   I   P   R   D   L   F   E   D   E   L   V   P   L   F   E   K   A

        766         775         784         793         802         811
GGA CCT ATA TGG GAT CTT CGT CTA ATG ATG GAT CCA CTC ACT GGT CTC AAT AGA
 G   P   I   W   D   L   R   L   M   M   D   P   L   T   G   L   N   R

        820         829         838         847         856         865
GGT TAT GCG TTT GTC ACT TTT TGT ACA AAA GAA GCA GCT CAG GAG GCT GTT AAA
 G   Y   A   F   V   T   F   C   T   K   E   A   A   Q   E   A   V   K

        874         883         892         901         910         919
CTG TAT AAT AAT CAT GAA ATT CGT TCT GGA AAA CAT ATT GGT GTC TGC ATC TCA
 L   Y   N   N   H   E   I   R   S   G   K   H   I   G   V   C   I   S

        928         937         946         955         964         973
GTT GCC AAC AAT AGG CTT TTT GTG GGC TCT ATT CCT AAG AGT AAA ACC AAG GAA
 V   A   N   N   R   L   F   V   G   S   I   P   K   S   K   T   K   E

        982         991         1000        1009        1018        1027
CAG ATT CTT GAA GAA TTT AGC AAA GTA ACA GAG GGT CTT ACA GAC GTC ATT TTA
 Q   I   L   E   E   F   S   K   V   T   E   G   L   T   D   V   I   L
```

FIGURE 1C

```
       1036        1045        1054        1063        1072        1081
TAC CAC CAA CCG GAT GAC AAG AAA AAC AGA GGC TTT TGC TTT CTT GAA TAT
 Y   H   Q   P   D   D   K   K   N   R   G   F   C   F   L   E   Y

       1090        1099        1108        1117        1126        1135
GAA GAT CAC AAA ACA GCT GCC CAG AGG CGT AGG TTA ATG AGT GGT AAA GTC
 E   D   H   K   T   A   A   Q   R   R   R   L   M   S   G   K   V

       1144        1153        1162        1171        1180        1189
AAG GTC TGG GGG AAT GTT GGA ACT GTT GAA TGG GCT GAT CCT ATA GAA GAT CCT
 K   V   W   G   N   V   G   T   V   E   W   A   D   P   I   E   D   P

       1198        1207        1216        1225        1234        1243
GAT CCT GAG GTT ATG GCA AAG GTA AAA GTG CTG TTT GTA CGC AAC CTT GCC AAT
 D   P   E   V   M   A   K   V   K   V   L   F   V   R   N   L   A   N

       1252        1261        1270        1279        1288        1297
ACT GTA ACA GAA GAG ATT TTA GAA AAG GCA TTT AGT CAG TTT GGG AAA CTG GAA
 T   V   T   E   E   I   L   E   K   A   F   S   Q   F   G   K   L   E

       1306        1315        1324        1333        1342        1351
CGA GTG AAG AAG TTA AAA GAT TAT GCG TTC ATT CAT TTT GAT GAG CGA GAT GGT
 R   V   K   K   L   K   D   Y   A   F   I   H   F   D   E   R   D   G
```

FIGURE 1D

```
            1360          1369          1378          1387          1396          1405
GCT GTC AAG   GCT ATG GAA   GAA ATG AAA   GGC AAA GAC   TTG GAG GGA   GAA AAT ATT
 A   V   K     A   M   E     E   M   K     G   K   D     L   E   G     E   N   I

            1414          1423          1432          1441          1450          1459
GAA ATT GTT   TTT GCC AAG   CCA CCA GAT   CAG AAA AGG   AAA GAA AAA   GCT CAG
 E   I   V     F   A   K     P   P   D     Q   K   R     K   E   K     A   Q

            1468          1477          1486          1495          1504          1513
AGG CAA GCA   AAA AAT CAA   ATG TAT GAC   TAC TAT GGT   CCA CCT
 R   Q   A     K   N   Q     M   Y   D     Y   Y   G     P   P

            1522          1531          1540          1549          1558          1567
CAT ATG CCC   CCT CCA AGA   GGT CGA GGG   GGT CGT GGA   GGT GGT TAT   GGA
 H   M   P     P   P   R     G   R   G     G   R   G     G   G   Y     G

            1576          1585          1594          1603          1612          1621
TAT CCT CCA   GAT TAT TAT   GGA TAT GAA   GAT TAT TAT   GAT TAT GGT   TAT GAT
 Y   P   P     D   Y   Y     G   Y   E     D   Y   Y     D   Y   G     Y   D

            1630          1639          1648          1657          1666          1675
TAC CAT AAC   TAT CGT GGT   GGA TAT GAA   GAT CCA TAC   TAT GGT TAT   GAA GAT TTT
 Y   H   N     Y   R   G     G   Y   E     D   P   Y     Y   G   Y     E   D   F
```

FIGURE 1E

```
      1684          1693          1702          1711          1720          1729
CAA GTT GGA GCT AGA GGA AGG GGT AGA GGA AGG GGT GCA AGG GGT GCT CCA TCC
 Q   V   G   A   R   G   R   G   R   G   R   G   A   R   G   A   P   S

      1738          1747          1756          1765          1774          1783
AGA GGT CGT GGG GCT CCT CCC CGC GGT AGA GCC GGT TAT TCA CAG AGA GGA
 R   G   R   G   A   P   P   R   G   R   A   G   Y   S   Q   R   G

      1792          1801          1810          1819          1828          1837
GGT CCT GGA TCA GCA AGA GGC GTT CGA GCA GGG AAA AGG GGT CGA GGC CGG TCC
 G   P   G   S   A   R   G   V   R   A   G   K   R   G   R   G   R   S

      1846          1855          1864          1873          1882          1891
TGA CCT GTT ACA ATG AAG ACT GAC TTG CTA TGT GGG ATT ACA CCA GAA GCT TGC

      1900          1909          1918          1927          1936          1945
AGT GGA GTA ATG GTA ATG TCA AGC AAC CTT AAA TAT GTC GGC TGT ATA GGA

      1954          1963          1972          1981          1990          1999
GCA TAT TCT ATT GCA GAA GAC CTT CCT ATG AAG ATC ATG GAA TCA AAT ACG GGA

      2008          2017          2026          2035          2044          2053
CAT TGA ACT AAT ACT TGG ACT TTG ATA TGA ATT TCT TTA ACA ATT TTC TCT GCA

      2062          2071
GTG CAA GTT ATT AAA CTA AAG CTA CT 3'
```

FIGURE 1F

```
  1  M A - - T E H V N G N G T E E P M D T T S A V I H S E N F Q    2809795
  1  M V K L A K A G K T H G E A K K M A P P P K E V E E D S E D    GI 128842

 29  T L L - - - D A G L P Q K V A E K L D E - - -                  2809795
 31  E E M S E E E D D S S G E E V V I P Q K K G K K A T A T P A    GI 128842

 46  - - I Y V A - -                                                2809795
 61  K K V V V S Q T K K V A V P T P A K K A A V T P G K K A A A    GI 128842

 50  - - - - - - - - - - - - - - - - - - - - - G L V A -            2809795
 91  T P A K K A V T P A K K A V A T P G K K G A T Q A K A L V A T  GI 128842

 54  - - - - - - - - - - - - - - - - - - H S D L D E R A            2809795
121  P G K K G A V T P A K G A K N G K N A K K E D S D E D E D D    GI 128842

 62  I E A L K E F N E D G A L A V L Q Q F K D S D L S H V Q N K    2809795
151  D D D E D D S D E D E E E D E F P P V V K G K Q G K            GI 128842

 92  S A F L C G V M K T Y R Q R E K Q G T K V A D S S K G P D E    2809795
181  V A A A P A S E D E D E E E E D E E E E D D S                  GI 128842

122  A K I K A L L - - - M E I T P A K G K K A P A K V V P V K A K N V A E -   2809795
211  E E E A E E E E E E E E E E E                                  GI 128842

129  - - - - - - - - - E R T                                        2809795
241  E D D D E E E E E E E E E E E                                  GI 128842
```

FIGURE 2A

```
132  GYTLDVTTGQRKYGGPPPDSVYSGQQPSVG   2809795
271  EEPVKPAPGKRKKEMTKQKEVPEAKKQKVE   GI 128842

162  T------EIFVGKIPRDLFEDELVPLFEK    2809795
301  GSESTTPFNLFIGNLNPNKSVAELKVAISE   GI 128842

185  AGPIWDLRLMMDPLTGLNRGYAFVTFCTKE   2809795
331  PFAKNDLAVV-DVRTGTNRKFGYVDFESAE   GI 128842

215  AAQEAVKLYN---NHEIRSGKHIGV-CIS    2809795
360  DLEKALELTGLKVFGNEIKLEKPKGRDSKK   GI 128842

240  VANNRLFVGSIPKSTKEQILEEFSKVTEG    2809795
390  VRAARTLLAKNLSFNITEDELKE--VFED    GI 128842

270  LTDVILYHQPDDKKNRGFCFLEYEDHKTA    2809795
417  ALEIRLVSQDG--KSKGIAYIEFKSEADA    GI 128842

300  AQARRLMSGKVKVWGNVG--TVEWADPIE    2809795
444  EKNLEEKQGAEIDGRSVSLYYTGEKGQRQE   GI 128842

328  DPDPEVM--AKVKVLEVRNLANTVEEILE    2809795
474  RTGKNSTWSGESKTLVLSNLSYSATEETLQ   GI 128842

356  KAFSQ--FGKLERVK-KLKDYAFIHFDER    2809795
504  EVFEKATFIKVPQNQGKSKGYAFIEFASF    GI 128842
```

FIGURE 2B

382 DGAVKAMEEMNGKDLEGENIEIVFAKP - - - 2809795
534 EDAKEALNSCNKMEIEGRTIRLELQGPRGS GI 128842

409 PDQKRKERKAQ - - - - RQAAKNQMYDDYYY 2809795
564 PNARSQPSKTLEVKGLSEDTTEETLKES - GI 128842

434 YGPPHMPPPTRGRGRGGRGGGYGYPPDYYGY 2809795
592 FEGSVRARIVTDRETGSSKGFGFV-DFNSE GI 128842

464 EDY - - - - YDYYGYDYHNYRGGYEDPYYG 2809795
621 EDAKAAKEAMEDGEIDGNKVTLDWAKPK-G GI 128842

488 YEDFQVGARGRGGRGARGAAPSRGRGAAPP 2809795
650 EGGFGGGRGGGGFGGGGRGGGGRGGGFGG GI 128842

518 RGRAGYSQRGGGPGSARGVRAGK - - RGRGR 2809795
680 RGRGGFGGGRGGGGFRGGGGRGGGGDFKPQGK GI 128842

545 S 2809795
710 KTKFE GI 128842

FIGURE 2C